

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 01-106
NPDES PERMIT NO. CA0037796

WASTE DISCHARGE REQUIREMENTS FOR:

PINOLE-HERCULES WATER POLLUTION CONTROL PLANT
CITY OF PINOLE
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. The City of Pinole, hereinafter called the Discharger, submitted a Report of Waste Discharge for issuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Purpose of the Order

2. This NPDES permit regulates the discharge of treated wastewater to San Pablo Bay, waters of the State and the United States. This discharge was previously governed by Waste Discharge Requirements in Order No. 94-111, adopted by the Board on September 21, 1994.

Facility Description

3. Location: The Discharger owns and operates the municipal wastewater treatment plant located at 11 Tennent Avenue in Pinole, Contra Costa County. A map showing the location of the facility is included in Attachment A.
4. Service Area and Population: The plant provides secondary level treatment for domestic wastewater collected within the cities of Pinole and Hercules. The Discharger's service area currently has a population of about 38,500 people.
5. Discharge Classification: The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharge as a major discharge.
6. Wastewater Treatment Process: The wastewater treatment process at the facility consists of pretreatment by screening, primary clarification, biological treatment using activated sludge, secondary clarification, disinfection, and dechlorination.
7. Sludge Treatment Process: Sludge from plant operations is thickened, anaerobically digested, and sent to a centrifuge for dewatering. The resulting dewatered sludge is currently disposed of at the Richmond Landfill in Contra Costa County.

Discharge Description

8. **Discharge Volume and Plant Capacity:** The treatment plant has an average dry weather flow design capacity of 4.06 million gallons per day (mgd), and can treat up to 10.3 mgd during the wet weather flow period. In 2000, the plant discharged an average dry weather flow of 2.29 mgd, and an annual average flow of about 2.41 mgd. To accommodate growth from the City of Hercules, the City of Pinole expects to expand its plant from its present capacity of 4.06 mgd to 5.00 mgd within the next 2-4 years. A preliminary study indicates that the plant will need three additional secondary clarifiers, one new digester, larger capacity influent pumps, and an additional blower to accommodate the proposed flow increase.
9. **Discharge Location:** Treated wastewater (Waste 001) is currently discharged into San Pablo Bay, a water of the State and the United States, through a submerged deepwater diffuser about 3,600 feet offshore at a depth of about 18 feet below mean lower low water (Latitude 38°03'06"; Longitude 122°14'55"). The outfall (E-001) is used jointly by Pinole and the cities of Rodeo and Hercules. An eductor system at the Rodeo Sanitary District is used to convey treated wastewater from Rodeo through the outfall. Excess secondary treated effluent (Waste 002) from the Pinole treatment plant is released through a shallow water outfall (E-002) to San Pablo Bay (Latitude 38°00'47"; Longitude 122°17'45"); the latest release through this outfall took place in February 2001.
10. **Shallow Water Outfall:** The Discharger uses its shallow water outfall after advance notice to the Regional Board approximately 1 to 2 times each year. Use of the outfall is typically for no more than 23 hours during wet weather conditions. The land outfall leading to the deep-water outfall may need to be replaced. The shallow water outfall may also need to be used during scheduled or unscheduled repairs to the land outfall and the deep-water outfall system. Discharge to the shallow outfall is not in accordance with the prohibitions of this order. Rodeo and the Cities of Pinole and Hercules should cooperatively study alternatives to eliminate excessive flows which result in discharges from the shallow water outfall.
11. **Eductor Station:** The existing eductor station often exceeds its capacity during winter months. In order to accommodate increased growth in the area and reduce the frequency of Waste 002 shallow water discharges, the eductor system will likely have to be replaced. A study of the joint effluent disposal facility by Brown and Caldwell Engineers in 1994 suggests that a new lift station replace it. Discharge to the shallow outfall is not in accordance with the prohibitions of this Order. Rodeo and the Cities of Pinole and Hercules should cooperatively study alternatives to the existing eductor system.
12. There are viable shellfish beds in San Pablo Bay that could be affected by the discharged wastewater. To protect the shellfish beds, the Board has required, and will continue to require, that the wastewater receive an initial dilution of at least 45:1 in the receiving water.
13. General quality of the effluent discharged from the plant, based on information provided in the application and self-monitoring reports, is as follows:

Constituent	Units	Average
Biochemical Oxygen Demand	mg/l	7.3
Total Suspended Solids	mg/l	15.3
Settleable Matter	ml/l/hr	<0.1
Pinole-Hercules WPCP	2	
NPDES Permit No. 01-106		

Stormwater Discharge Description

14. The U.S. EPA promulgated federal regulations for stormwater discharges on November 19, 1990. The regulations [40 Code of Federal Regulations (CFR) Parts 122, 123 and 124] require specific categories of industrial activities including Publicly Owned Treatment Works (POTWs) which discharge stormwater associated with industrial activity (industrial stormwater) to obtain a NPDES permit and to implement Best Available Technology Economically Available (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial stormwater discharges. POTWs are not required to obtain a separate NPDES permit if all stormwater flows from the treatment works are treated by the POTW.
15. The stormwater from the wastewater treatment and pumping facilities are directed to the wastewater treatment plant headworks and are treated along with the wastewater discharged to the treatment plant. These stormwater flows constitute all industrial stormwater at this facility and consequently this Order shall serve to regulate all industrial stormwater at this facility.

Regional Monitoring Program

16. On April 15, 1992, the Regional Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region under authority of California Water Code Section 13267, to report on the water quality of the estuary. These permit holders, including the Discharger, responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute in lieu of individual receiving water monitoring. This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. This permit specifies that the Discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment, and biota of the estuary.

Applicable Plans, Policies and Regulations

Basin Plan

17. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The State Water Resources Control Board (SWRCB) and the Office of Administrative Law approved the revised Basin Plan on July 20, and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan identifies beneficial uses for waters of the State in the Region, including surface waters and groundwaters. The Basin Plan also identifies water quality objectives, discharge prohibitions and effluent limitations intended to protect beneficial uses. This Order implements the plans, policies and provisions of the Board's Basin Plan.

Beneficial Uses

18. The Basin Plan contains water quality objectives and beneficial uses of San Pablo Bay and contiguous waters. The beneficial uses of San Pablo Bay are as follows:

- Industrial Service Supply
- Navigation
- Water Contact Recreation
- Commercial and Sport Fishing
- Wildlife Habitat
- Preservation of Rare and Endangered Species
- Fish Migration and Spawning
- Shellfish Harvesting
- Estuarine Habitat

California Toxic Rule

19. On May 18, 2000, the U.S. EPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the California Toxics Rule (CTR). The CTR specified water quality standards for numerous pollutants, of which some are applicable to the Discharger's effluent discharges.

State Implementation Policy

20. On March 2, 2000, the State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California*. This policy prescribes the plans for implementing the water quality standards in the CTR and applicable standards in the National Toxics Rule, and the Basin Plan. This policy is generally referred to as the State Implementation Policy (SIP). The Office of Administrative Law subsequently adopted the SIP on April 28, 2000. It became fully effective on May 18, 2000.

Basis for Effluent Limitations

General Basis

21. Water Quality Objectives (WQOs) and Effluent Limits: WQOs and effluent limitations in this permit are based on the SIP; the plans, policies and water quality objectives and criteria of the 1995 Basin Plan, CTR (Federal Register Volume 65, No. 97), applicable Federal Regulations (40 CFR Parts 122 and 131), National Toxics Rule (57 FR 60848, 22 December 1992; 40 CFR 131.36(b), "NTR"), National Toxics Rule Amendment (Federal Register Vol 60, No. 86, 4 May 1995 pg. 22229-22237), and best professional judgment (BPJ) as defined by the guidance below. Where numeric effluent limitations have not been established in the Basin Plan, 40CFR122.44(d) specifies that water quality based effluent limits may be set

based on U.S. EPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses and where adopted in accordance with State Law.

22. **BPJ Guidance:** U.S. EPA guidance documents upon which BPJ was developed may include in part:
- Technical Support Document for Water Quality Based Toxics Control, March 1991
 - U.S. EPA Region 9 Guidance For NPDES Permit Issuance, February 1994
 - Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993
 - Whole Effluent Toxicity (WET) Control Policy, July 1994
 - National Policy Regarding Whole Effluent Toxicity Enforcement, August 14, 1995
 - Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, April 10, 1996
 - Interim Guidance for Performance-Based Reductions of NPDES Permit Monitoring Frequencies, April 19, 1996
 - U.S. EPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final, May 31, 1996
 - Draft Whole Effluent Toxicity (WET) Implementation Strategy, February 19, 1997
23. **Applicable Water Quality Objectives:** The Basin Plan specifies numeric water quality objectives (WQOs) as well as a narrative objective for toxicity in order to protect beneficial uses: "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses in aquatic organisms." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information. The CTR promulgates numeric aquatic life criteria for 23 toxic pollutants, and numeric human health criteria when certain conditions are met. This Order also includes effluent limits for pollutants listed in the latest 303(d) report as impairing the quality of waters due, in part, to municipal point source discharges.
24. **Basin Plan Salinity Policy:** The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality objectives. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance.
25. **CTR Receiving Water Salinity Policy:** The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine

beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, based on ambient hardness, for each substance.

26. **Receiving Water Salinity:** The receiving waters for the discharges regulated by this Order are the waters of San Pablo Bay. Data from Regional Monitoring (RMP) for Point Pinole (Station BD30) were used to determine the salinity of the receiving water. The Point Pinole station is very near the discharge point. Based on the 1993 to 1999 salinity data for the reference station, the receiving water of the subject discharge has salinity above the 10 ppt more that 95% of the time and 5 ppt greater than 75% of the time. Therefore, the receiving water is saltwater in character under both salinity definitions.
27. **Technology Based Effluent Limits:** Effluent limits for conventional pollutants are technology based. Limits in this permit are the same as in the prior permit for the following constituents: Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), settleable matter, oil and grease, and chlorine residual. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility.
28. **Assimilative Capacity:** In response to the State Board's recommendation (SB Order # WQ 2001-06), staff has evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants and pollutants which Pinole-Hercules has reasonable potential. The evaluation included review of RMP data (local and Central Bay stations), effluent data, and WQOs. From this evaluation, staff has found that the assimilative capacity is highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representiveness of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on pollutant-by-pollutant basis..." So for bioaccumulative pollutants, based on best professional judgment, dilution credit is not included in calculating the final WQBEL. However, in calculating the WQBEL for non-bioaccumulative, it is assumed there is assimilative capacity, and a 10:1 dilution is granted.

Specific Basis

Constituents Identified in the 303(d) List

29. On May 12, 1999 the U.S. EPA approved a revised list of impaired water bodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. San Pablo Bay is listed as an impaired water body. The pollutants impairing San Pablo Bay include copper, mercury, nickel, selenium, exotic species, PCB total, dioxin and furan compounds, chlordane, DDT, Dieldrin, Diazinon, and dioxin-like PCBs.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

30. Based on the 303(d) list of pollutants impairing San Pablo Bay, the Board plans to adopt TMDLs for these pollutants no later than 2010, with the exception of dioxin and furan

compounds. The Board defers development of the TMDL for dioxins and furans to the U.S. EPA. Future review of the 303(d) list for San Pablo Bay may result in revision of the schedule and/or provide schedules for other pollutants.

31. The TMDLs will include waste load allocations (WLAs) and load allocations (LAs) for point sources and non-point sources, respectively, and are intended to result in the attainment of water quality standards in the water body. The final effluent limitations for this discharge will be based on WLAs that are derived from the TMDLs.
32. Compliance Schedule: Pursuant to Section 2.1.1 of the SIP, "the compliance schedule provisions for the development and adoption of a TMDL only apply when: ... (b) the discharger has made appropriate commitments to support and expedite the development of the TMDL in cooperation with other dischargers. In determining appropriate commitments, the RWQCB should consider the discharge's contribution to current loadings and the discharger's ability to participate in TMDL development." The discharger has agreed to assist the Board in TMDL development. One mechanism to demonstrate the commitment maybe for the discharger to enter into agreement with the Board staff to provide specific work products to complete TMDLs.
33. The following summarizes the Board's strategy to collect water quality data to develop TMDLs:
 - a. Data Collection: The Board will request Dischargers to collectively assist in developing and implementing analytical techniques capable of detecting 303(d) listed pollutants to at least their respective levels of concern or water quality objectives. The Board will require Dischargers to characterize the pollutant loads from their facilities into the water quality limited water bodies. The result will be used in the development of TMDLs, but may also be used to update/revise the 303(d) list and/or change the water quality objectives for the impaired water bodies including San Pablo Bay.
 - b. Funding Mechanism: The Board has received and anticipates continued receipt of resources from federal and state agencies for the development of TMDLs. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among Dischargers through the RMP or other appropriate funding mechanisms.

Reasonable Potential Analysis

34. As specified in Section 1.3 of the SIP, permits are required to include WQBELs for all pollutant discharges "which may 1) cause, 2) have the reasonable potential to cause, or 3) contribute to an excursion above any applicable priority pollutant criterion or objective." Using the method prescribed in Section 1.3 of the SIP, Board staff has analyzed the effluent data to determine if the discharges which are the subject of this Order have reasonable potential to cause or contribute to an excursion above any applicable priority pollutant criterion or objective ("Reasonable Potential Analysis" or "RPA").
 - a. *Reasonable Potential Determination.* The RPA involves identifying the observed maximum effluent concentration (MEC) for each constituent based on effluent concentration data. There are two triggers in determining reasonable potential. For the

first trigger, the MEC is compared with the lowest applicable WQO, which has been adjusted for pH, hardness, and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO and a water-quality based effluent limitation (WQBEL) is required. The second trigger is activated if the maximum ambient concentration (B) is greater than the adjusted WQO. If B is less than the WQO, then a limit is only required under certain circumstances to protect beneficial uses. For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO, numeric water quality-based effluent limitations (WQBELs) are required. WQBELs are based on U.S. EPA water quality criteria and the Basin Plan objectives. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric standards from the NTR, and CTR.

- b. *RPA Data.* The RPA was based on effluent monitoring data for 1997 through 2000. A review of the analytical data found that the following constituents have been observed in the discharged effluent at concentrations equal to or greater than respective analytical detection limits: arsenic, cadmium, chromium, copper, cyanide, mercury, nickel, silver, and selenium. PAHs have not been detected at levels greater than analytical detection limits used. These detection limits, however, are numerically greater than the applicable water quality objectives, so relative assessment cannot be made, and a RPA was not conducted for PAHs.
- c. *Discharges to San Pablo Bay*
 - (1) *Reasonable Potential.* Based on the RPA, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above water quality objectives due to their presence in the discharge and numeric effluent limits are required to be included in the permit for copper, mercury, and cyanide. The following constituents have been found to have reasonable potential due their presence in background stations at levels exceeding water quality objectives: dieldrin and 4,4'-DDE. The background RMP data were not collected using USEPA methods for dieldrin or 4,4'-DDE and no effluent data has been collected. This permit will require the Discharger to collect data and the permit may be reopened at a later date to establish limits for dieldrin and 4,4'-DDE.
 - (2) *No Reasonable Potential.* Based on the RPA, the following constituents have been found to not show reasonable potential to cause or contribute to excursion above applicable water quality objectives: arsenic, cadmium, chromium, nickel, silver, and selenium. Based on the RPA and continued consistent plant performance, effluent limits for these constituents are not needed and are not included in this permit. Monitoring is required for these and other constituents for which data is not available to perform a reasonable potential analysis.
- d. *Summary of Reasonable Potential Analysis (RPA) Determinations*

The WQOs, Maximum Observed Effluent Concentration and reasonable potential conclusions from the RPA are listed in the following table for each constituent analyzed. All the data are in µg/l.

Constituent	Maximum Observed Concentration or Lowest Detection Limit	Water Quality Objective	Reasonable Potential
Arsenic	5	36	N
Cadmium	0.2	9.3	N
Chromium	2	50	N
Copper	8	3.1	Y
Lead	3	5.6	N
Mercury	0.2	0.025	Y
Nickel	7	7.1	N
Selenium	0.65	5	N
Silver	0.6	2.3	N
Zinc	40	58	N
Cyanide	6	1	Y
Acenaphthylene	0.3	No Obj	CD
Anthracene	0.3	110,000	N
1,2,-Benzo(a)nthracene	0.3	0.049	DL
3,4-Benzofluoranthene	0.3	0.049	DL
Benzo(k)fluoranthene	0.3	0.049	DL
1,12-Benzo(g,h,l)pyrene	0.3	No Obj	CD
Benzo(a)pyrene	0.3	0.049	DL
Chrysene	0.3	0.049	DL
Dibenzo(ah)anthracene	0.3	0.049	DL
Fluorene	0.3	14,000	N
Indeno(1,2,3-cd)pyrene	0.3	0.049	DL
Phenanthrene	0.3	No Obj	CD
Pyrene	0.3	11,000	N
Phenol	36	4,600,000	N
Dieldrin	No data	0.00014	Y ¹
4,4'-DDE	No data	0.00059	Y ¹
Other priority pollutants	No data	Various	CD

Table Definitions:

- CD = Cannot determine reasonable potential due to the absence of data
- DL = Detection limit above water quality objective
- N = No reasonable potential
- No Obj = No water quality objective available
- Y = Reasonable potential
- Y¹ = Reasonable potential due to ambient background. No effluent concentration data exist to calculate a WQBEL using Section 1.4 of the SIP. Effluent characterization study required. See Finding 42.

e. Reasonable Potential Analysis for Dioxin

- (1) The CTR establishes a standard for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) of 0.14 picograms per liter (pg/l) for the protection of human health from consumption of aquatic organisms.
- (2) Although the CTR establishes a numeric standard for just one of the dioxin-like compounds, the preamble of the CTR states that California should use toxicity equivalents or TEQs in NPDES permits where there is a reasonable potential for dioxin-like compounds to cause or contribute to a violation of a narrative criterion. The preamble further states U.S. EPA's intent to use the 1998 World Health Organization Toxicity Equivalence Factor (TEF) scheme in the future and encourages California to use this scheme in State programs. Finally, the preamble states U.S. EPA's intent to adopt revised water quality criteria guidance subsequent to their health reassessment for dioxin-like compounds.
- (3) The State Implementation Policy establishes the implementation policy for all toxic pollutants including dioxins and furans. The State Implementation Policy requires a limit for 2,3,7,8-TCDD if a limit is necessary, and requires monitoring for a minimum of 3 years by all major NPDES dischargers for the other sixteen dioxins and furans compounds.
- (4) The Basin Plan specifies a narrative objective for bio-accumulative substances:

“Many pollutants can accumulate on particulates, in sediments, or bio-accumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in the bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.”

This objective is applicable to dioxins and furans compounds. There is consensus in the scientific community that these compounds associate with particulates, accumulate in sediments, and bio-accumulate in the fatty tissue of fish and other organisms.

- (5) The U.S. EPA's 303(d) listing determined that the narrative objective for bio-accumulative pollutants was not met because of the levels of dioxin and furans present in the fish tissue. The State dissents on this determination. No Discharge data is available to show if there are dioxins and furans present in the discharge at levels above the WQ Criterion.
- f. *Organic Constituents with Limited Data.* Reasonable potential cannot be determined for various organic constituents because of lack of data and/or because current EPA methods have detection limits above water quality objectives or effluent limitations. The Executive Officer has issued a letter dated August 6, 2001, under authority of California Water Code Section 13267 to all wastewater dischargers in the Region which requires effluent monitoring to fill this data gap and allow completion of reasonable potential analysis for all priority pollutants.
- g. Based on the RP results, the effluent limitations for arsenic, cadmium, hexavalent chromium, nickel, lead, selenium, silver, and zinc in the previous permit are excluded in

this Order as they do not pose reasonable potential to cause, or contribute to an excursion above any numeric or narrative water quality objectives.

- h. *Monitoring.* For constituents that do not show a reasonable potential to cause or contribute to exceedance of applicable water quality objectives, effluent limits are not included in the permit but continued monitoring is required as identified in the self-monitoring program of the permit. If significant increases occur in the concentrations of these constituents to the extent that reasonable potential would occur, the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases pose a threat to water quality.
- i. *Permit Reopener.* The permit includes a reopener provision to allow numeric effluent limits to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a water quality objective. This determination, based on monitoring results, will be made by the Board and will be implemented as an amendment to the permit, through the public hearing process.

Interim Limits

35. If an existing discharger cannot immediately comply with a new more stringent effluent limitation, the SIP and the Basin Plan authorize a compliance schedule in the permit. To qualify for a compliance schedule, both the SIP and the Basin Plan require that the discharger demonstrate that it is infeasible to achieve immediate compliance with the new limit. The SIP and Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:
- i. documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
 - ii. documentation of source control and/or pollution minimization efforts currently under way or completed;
 - iii. a proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
 - iv. a demonstration that the proposed schedule is as short as practicable.

On July 24, 2001, the Discharger submitted "NPDES Feasibility Analysis for Achievement of Projected Final Effluent Limits for the Pinole-Hercules Water Pollution Control Plant." Based on the information in this report, Board staff believes that the Discharger has fulfilled all of the above requirements and is eligible for compliance schedules for mercury.

Copper

36. Copper: As copper has been determined to be an impairing pollutant on the 303(d) list, and since a RPA has determined there is reasonable potential for the discharge to contribute to a water quality exceedance, a WQBEL is required in this permit. The final WQBEL will be consistent with the wasteload allocation derived from a TMDL. Effluent copper concentration data collected by the Discharger during the term of this permit shall be used by the Regional Board to develop a mass emission study as part of a region-wide TMDL effort for copper.

- a. Past Copper Effluent Limitation: The Discharger's past permit, Order 94-111, specified a limit for copper of 37 µg/l.
- b. Basis for Limitation: This Permit establishes WQBELs for copper calculated in accordance with the State Implementation Policy. These WQBELs are as protective or more protective than the previous permit limit. The Discharger's data show that the discharger can immediately comply with the calculated WQBELs for copper.

Mercury

37. Mercury: As mercury has been determined to be an impairing pollutant on the 303(d) list, and since a RPA has determined there is a reasonable potential for the discharge to contribute to a water quality exceedance, a WQBEL is required in this permit. The final WQBEL will be consistent with the wasteload allocation derived from a TMDL. Effluent mercury data collected by the Discharger during the term of this permit shall be used by the Regional Board to develop a mass emission study as part of a region-wide TMDL effort for mercury. The Discharger's very limited data do not show that the discharge can immediately comply with the calculated WQBEL for mercury. The calculated WQBELs are pursuant to the SIP, and are presented in the Fact Sheet as a point of reference to conduct a feasibility analysis for immediate compliance.

- a. *Mercury Water Quality Objectives and TMDL.* For mercury, the national chronic criterion is based on protection of human health. The criterion is intended to limit the bioaccumulation of methyl-mercury in fish and shellfish to levels that are safe for human consumption. As described in the Gold Book, the freshwater criterion is based on the Final Residual Value of 0.012 µg/l derived from the bio-concentration factor (BCF) of 81,700 for methyl mercury with the fathead minnow, which assumes that essentially all discharged mercury is methyl-mercury. The saltwater criterion of 0.025 µg/l was similarly derived using the BCF of 40,000 obtained for methyl-mercury with the eastern oyster and the criterion is listed in the 1986 Basin Plan. The CTR adopted a dissolved mercury water quality objective of 0.05 µg/l for protection of human health. However, according to Footnote b in the CTR's Table of Criteria for Priority Toxic Pollutants, "criteria apply to California water except for those waters subject to objectives in Table III-2A and III-2B of the San Francisco Regional Water Quality Control Board's (SFRWQCB) 1986 Basin Plan, that were adopted by the SFRWQCB and the State Water Resources Control Board, approved by U.S. EPA, and which continue to apply. Although ambient background concentrations are below WQOs for protection of both freshwater and saltwater aquatic species, San Pablo Bay is listed as impaired for mercury because of fish tissue level exceedances. These WQCs were meant to limit bioaccumulation of methyl-mercury in fish and shellfish. The Board intends to work toward the derivation of a TMDL that will lead towards overall reduction of mercury mass loadings in the watershed. Based on these studies, the final limit will be derived based on a TMDL/WLA.
- b. *Mercury Strategy.* Board staff is in the process of developing a plan to address control of mercury levels in San Francisco Bay including development of a TMDL. At present, it appears that the most appropriate course of action is to apply interim mass loading limits to these discharges, and focus mercury reduction efforts on more significant and

controllable sources. While site-specific objectives and Total Maximum Daily Loads (TMDLs) are being developed, the Discharger will be held accountable for maintaining ambient conditions to the receiving water by complying with performance-based mass emission limits. The Discharger is required to maximize control over the influent mercury sources, with consideration of relative costs and benefits. The Discharger is encouraged to continue working with other municipal dischargers to optimize both source control and pollution prevention efforts and to assess alternatives for reducing mercury loading to, and protecting beneficial uses of, receiving waters.

- c. *Effluent Concentration Limit:* This Order establishes an interim monthly average limit for mercury based on staff's analysis of the performance of over 20 secondary treatment plants in the Bay Area. This analysis is described in a Board staff report titled "Staff Report, Statistical Analysis of Pooled Data from Regionwide Ultraclean Mercury Sampling." The objective of the analysis is to provide an interim concentration limit that characterizes facility performance using only ultra-clean data and that maintains current receiving water quality. Based on Board staff's report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA," dated June 30, 2000, municipal sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond those required by this permit or a separate 13267 letter.
- d. *Mass Emission Limit.* A mass-based loading limit (mass emission limit) for mercury is established in this Order (Effluent Limitation B.6.a). This limit is based on applying the measured concentration to the average annual treatment plant flow. The limit is designed to hold the Discharger to no increase in mass emission based on current plant flows and the concentration allowed by the current permit until a TMDL is established. The final effluent limit will be based on the WLA derived from the mercury TMDL. When a final WLA is approved for the Discharger, the permit may be reopened.

Cyanide

- 38. The CTR specifies that the salt water Criterion Chronic Concentration (CCC) of 1 µg/l for cyanide is applicable to San Pablo Bay. This CCC value is below the presently achievable reporting limit (ranges from approximately 3 to 5 µg/l).
- 39. The background data set for cyanide was very limited as there was only six dissolved and six total data points which were all non detects (<1µg/l) collected in 1993. The non-detect value (<1µg/l) is equivalent to the WQO (1 µg/l) and causes the dilution portion of the final effluent limit equation to be eliminated, thereby giving no dilution. The calculated WQBELs for cyanide, presented in the fact sheet, are a point of reference to conduct a feasibility study for immediate compliance. Cyanide is a regional problem associated with analytical protocol for cyanide analysis due to matrix interferences. A body of evidence exists to show that cyanide measurements in effluent may be an artifact of the analytical method. This question is being explored in a national research study sponsored by the Water Environment Research Foundation (WERF).
- 40. Pursuant to SIP (Section 2.2.2, Interim Requirements for Providing Data), in the case where available data are insufficient (e.g., cyanide), a data collection period ending on May 18,

2003, is established. This Order contains a provision requiring the Discharger to fully participate in a discharger-funded study for data collection. The Discharger is required to fully participate in the study and submit a final report to the Board by May 18, 2003. The Board intends to include, in a subsequent permit revision, a revised final limit based on the study required as an enforceable limit. During the data collection period, an interim limit is included. The Board may take appropriate enforcement actions if interim limits and requirements are not met. Discharger groups have also proposed to develop cyanide site-specific objectives. The calculated WQBELs may also be revised based on the cyanide SSO.

Antibacksliding and Antidegradation

41. Compliance with Antibacksliding and Antidegradation

- a. The limitations in this Order are in compliance with the Clean Water Act Section 402(o) prohibition against establishment of less stringent water quality-based effluent limitations for the following reasons:
 - (1) The revised final limitations will be in accordance with the TMDL and waste load allocation once they are established; hence, this order is exempt in accordance with Clean Water Act Section 303(d)(4)(A).
 - (2) Antibacksliding does not apply to the interim limitations established under the time to come into compliance provision.
 - (3) Even if the antibacksliding and antidegradation policies were to apply to interim limitations under Clean Water Act Section 402(o)(2)(c), less stringent limitations have not been established as interim limitations.
- b. The interim limits in this permit are in compliance with antidegradation because 1) the interim limits hold the Discharger to current facility performance or current limitations, whichever is more stringent; and 2) the final limits are in compliance with anti-degradation requirement.

4,4'-DDE and Dieldrin

42. A MEC could not be determined for 4,4'-DDE and Dieldrin because the discharger has not sampled for this constituent in the effluent. The RPA for 4,4'-DDE and Dieldrin was based on comparing the WQO with an ambient background concentration. According to the RPA methodology described in the SIP, 4,4'-DDE and Dieldrin have reasonable potential to cause or contribute to an excursion above a WQO and a numeric WQBEL is required. An interim limit cannot be established because there is no effluent data. As a result provisions are included in the permit requiring the discharger to conduct effluent monitoring to characterize 4,4'-DDE and Dieldrin.

Upon completion of the required monitoring, the RWQCB shall use the gathered data to establish interim limits.

The Central Bay is listed as impaired for DDT and Dieldrin. 4,4'-DDE is chemically linked to the presence of DDT. The Board intends to work toward derivation of a TMDL that will

lead towards overall reduction of these constituents. Based on these studies, the final limit will be derived from the TMDL/WLA.

Whole Effluent Acute Toxicity

43. The Basin Plan contains a narrative toxicity objective stating that "all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." In 1986, the Board initiated the Effluent Toxicity Characterization Program (ETCP), with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams. Dischargers were required to monitor their effluent using critical life stage toxicity tests to generate information on toxicity test species sensitivity and effluent variability to allow development of appropriate chronic toxicity effluent limitations. Board guidelines for conducting toxicity tests and analyzing results were published in 1988 and last updated in 1991. The Discharger was not required to participate in the ETCP.
44. This Order does not contain chronic toxicity effluent limitations or monitoring requirements because there are no industrial contributions to its flow, and as such, it is unlikely that toxicity of this sort would be present in the treated effluent. The Board may consider amending this Order to impose chronic toxicity requirements if the Discharger experiences consistent violations of its acute toxicity effluent limitation, and/or the results of its toxicity identification evaluation (TIE) are inconclusive.

Optional Mass Offset

45. This Order contains requirements to prevent further degradation of the impaired water body. Such requirements include the adoption of mass limits that are based on the treatment plant performance, provisions for waste minimization and treatment plant optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d) listed pollutants to the receiving water can be achieved through a mass offset program. This Order includes an optional provision for a mass offset program.

Pollutant Minimization/Pollution Prevention

46. Pollution Prevention Program:
 - a. As described in the Discharger's Feasibility Analysis report of July 24, 2001, the Discharger has committed to initiating a number of pollution prevention actions for mercury.
 - b. The Board staff intends to require an objective third party to establish baseline programs, and to review program proposals and reports for adequacy.
 - c. For mercury the Discharger will conduct any additional source control or pollutant minimization measures in accordance with California Water Code 13263.3 and Section 2.1 of the SIP. Section 13263.3 establishes a separate process outside of the NPDES permit process for preparation, review, approval, and implementation of such source control and pollutant minimization measures.

Operations and Maintenance Manual

47. The Discharger maintains an Operations and Maintenance Manual for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommending operation strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices.

Ambient Water Quality Monitoring

48. Insufficient effluent and ambient background data. Staff's review of the effluent and ambient background monitoring data found that were insufficient data to determine reasonable potential and calculate numeric WQBELs for some pollutants listed in the SIP.
49. SIP- Required Dioxin study. The SIP states that each Regional Board shall require major and minor POTWs and industrial Dischargers in its region to conduct effluent monitoring for the 2,3,7,8 TCDD congeners whether or not an effluent limit is required for 2,3,7,8 – TCDD. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Regional Boards will use these monitoring data to establish strategies for a future multi-media approach to control these chemicals.
50. On August 6, 2001, the Regional Board sent a letter to all the permitted Dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data and the dioxin study. The sample plan is due October 1, 2001. An interim report presenting the data is due May 18, 2003, with the final report due 180 days prior to expiration of the permit.
51. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter".

Notification

52. The adoption of waste discharge requirements is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code, and Section 15263 of the California Code of Regulations.
53. The Board notified the Discharger and interested agencies and persons of its intent to reissue waste discharge requirements for the discharge, and has provided them with an opportunity for a public hearing and to submit their written views and recommendations.
54. The Board, in a public hearing, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted there under, and to the provisions of the Clean Water Act and

regulations and guidelines adopted there under, that the Discharger shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in the Findings is prohibited.
2. Discharge of Waste E001 into San Pablo Bay, at any point where it does not receive an initial dilution of at least 45:1 is prohibited. The City of Pinole shall be prohibited from discharging excess treated wastewater flows (Waste 002) through the shallow water outfall.
3. The bypass or overflow of untreated or partially treated wastewater to waters of the State either at the treatment facility or from the collection system or pump stations tributary to the treatment facility, is prohibited except as provided for bypasses under the conditions stated in 40 CFR 122.41 (m).
4. The discharge of average dry weather flows greater than 4.06 mgd is prohibited. The average dry weather flow shall be determined over 3 consecutive months each year.
5. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by this NPDES permit, to a storm drain system or waters of the State are prohibited.
6. Storm water runoff from the facility shall be discharged to the headworks of the treatment plant.

B. EFFLUENT LIMITATIONS

The term "effluent" in the following limitations means the fully treated wastewater effluent from the Discharger's wastewater treatment facility, as discharged to San Pablo Bay. Unless otherwise specified, all limitations shall apply to Waste 001.

1. The discharge of all treated wastewater shall not exceed the following limits:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
a. Carbonaceous Biochemical Oxygen Demand (BOD ₅)	mg/l	25	40	--	--
b. Total Suspended Solids	mg/l	30	45	--	--
c. Oil & Grease	mg/l	10	--	20	--
d. Settleable Matter	ml/l/hr	0.1	--	0.2	--
e. Total Chlorine Residual	mg/l	--	--	--	0.0

The chlorine residual requirement is defined as below the limit of detection in standard methods defined in *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfate dosage (which could be interpolated)

and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

2. **85% Percent Removal, CBOD and TSS:** The arithmetic mean of the carbonaceous biochemical oxygen demand (Five-day, 20°C) and total suspended solids values, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.
3. **Total Coliform Bacteria:** The treated wastewater, at some place in the treatment process prior to discharge, shall meet the following limits of bacteriological quality: The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive samples shall not exceed 240 MPN/100ml; and any single sample shall not exceed 10,000 MPN/100 ml. The Regional Board may consider amending this permit in the future to include a fecal coliform limit following completion of a Receiving Water Beneficial Use Study.
4. **pH:** The discharge of Waste 001 shall not have a pH value less than 6.0 nor greater than 9.0.

The Discharger shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied (i) The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) the duration of any individual excursion from the range of pH values shall not exceed 60 minutes.

5. **Whole Effluent Acute Toxicity:** Representative samples of the effluent shall meet the following limits for acute toxicity: (Compliance with these limits shall be achieved in accordance with Provision E.5 and E.6 of this Order.)

The survival of organisms in undiluted effluent shall be an eleven (11) sample median value of not less than 90 percent survival, and an eleven (11) sample 90 percentile value of not less than 70 percent survival. The eleven sample median and 90th percentile effluent limitations are as follows:

11 sample median: A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or less bioassay tests show less than 90 percent survival.

90th percentile: A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or less bioassay tests show less than 70 percent survival.

6. **Mass Emission Limits:** Until TMDL and WLA efforts for mercury provide enough information to establish a different WQBEL, the Discharger shall demonstrate that the total mercury mass loadings from the discharge to San Pablo Bay has not increased by complying with the following:

- a. **Mass Emission Limit:** The mass emission limit is 0.102 kilograms per month (kg/month) for mercury. The total mass load shall not exceed this limit.
- b. Compliance with these limits shall be evaluated using running annual average mass load. Running annual averages shall be calculated by taking the arithmetic average of the current monthly mass loading value (see sample calculation below) and the previous 11-month's values. Sample calculation:

Flow (mgd) = Average of monthly plant effluent flow in mgd.

Constituent Concentration ($\mu\text{g/l}$) = Average of monthly effluent concentration measurements in $\mu\text{g/l}$. If more than one measurement is obtained in a calendar month, the average of these measurements is used as the monthly value for the month. If test results are less than the method detection limit used, the measurement value is assumed to be equal to the method detection limit.

Mass Loading (kg/month) = (Flow) x (Constituent Concentration) x 0.1151
(Conversion Factor)

According to the antibacksliding rule in the Clean Water Act, Section 402(o), the permit may be modified to include a less stringent requirement following the completion of a TMDL and WLA.

7. **Toxic Substances Effluent Limitations:** The discharges of Waste 001 shall not exceed the following limits (1):

Constituent	Daily Maximum	Average Monthly	Interim Daily Maximum	Interim Monthly Average	Units	Notes
Copper	37	20		0.087	$\mu\text{g/l}$	(1)
Mercury			12 (2)(4)		$\mu\text{g/l}$	(1)(3)
Cyanide					$\mu\text{g/l}$	(1)

Footnotes:

(1)(a) Compliance with these limits is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

(b) All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis.

(c) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).

(d) Maximum Daily effluent limitations based on EPA aquatic life criterion continuous concentration may be met as a 4-day average (an average of all

samples taken over a continuous 4-day period). If compliance is to be determined based on a 4-day average, then concentrations of each of the 24-hour composite samples shall be reported, as well as the average of the total number of composite samples taken over the 4-day period.

- (2) Compliance with the cyanide limitation may be demonstrated by measurement of weak acid dissociable cyanide.
- (3) This interim limit shall remain in effect until March 31, 2010, for mercury, or until the Board amends the limits based on the Waste Load Allocations in the TMDL for mercury. However, during the next permit reissuance, Board staff may re-evaluate the interim limits. The monthly average interim limit shall apply to the discharge until a TMDL and WLA for mercury are completed. Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques to the maximum extent practicable, with method detection limit of 0.002 µg/L, or lower.
- (4) This interim limit shall remain in effect until May 18, 2003, or until the Board amends the limit based on additional background data or site specific objectives for cyanide. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste from the Discharger's treatment facility shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within one foot of the water surface:
 - a. Dissolved Oxygen: 5.0 mg/L, minimum
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors

cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

- b. Dissolved Sulfide: 0.1 mg/L, Maximum
 - c. pH Variation from normal ambient pH by more than 0.5 pH units
 - d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and 0.16 mg/L as N, Maximum
 - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the SWRCB as required by the Clean Water Act and regulations adopted there under. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. SLUDGE MANAGEMENT PRACTICES

1. All sludge treatment, processing, storage or disposal activities under the Discharger's control shall be in compliance with current state and federal regulations.
2. Sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors, or flies, or result in groundwater contamination.
3. Duty to mitigate: The discharger shall take all reasonable steps to prevent or minimize any sludge use or disposal, which has a likelihood of adversely affecting human health or the environment.
4. The treatment and temporary storage of sewage sludge at the Discharger's wastewater treatment facility shall not cause waste material to be in a position where it is, or can be carried from the sludge treatment and storage site and deposited in the waters of the State.
5. The sludge treatment and storage site shall have facilities adequate to divert runoff from adjacent areas, to protect boundaries of the site from erosion, and to prevent any conditions that would cause drainage from the materials in the temporary storage site. Adequate protection is defined as protection from at least a 100-year storm and protection from the highest possible tidal stage that may occur.
6. The discharger shall submit an annual report to the U.S. EPA regarding its sewage sludge disposal practices in accordance with the requirements of 40CFR503. The Discharger shall include a summary of this information in the Self-Monitoring Program Annual Report submitted to the Board.

7. The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

E. PROVISIONS

1. **Permit Compliance:** The Discharger shall comply with all sections of this Order starting October 1, 2001.
2. **Permit Rescission:** Requirements prescribed by this Order supersede the requirements prescribed by Order No. 94-111. Order No. 94-111 is rescinded upon the effective date of this Order.
3. **Self-Monitoring Program:** The Discharger shall comply with the Self-Monitoring Program (SMP, Attachment C) for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to U.S. EPA regulations 40CFR122.62, 122.63, and 124.5.
4. **Capacity Increase Study:** The discharger has indicated that a treatment capacity expansion may be necessary to accommodate sewage flow increases due to growth within the Cities of Pinole and Hercules within the next 2-5 years. If the Discharger determines that expansion of the treatment capacity of the Pinole-Hercules water pollution control plant is necessary, a study must be submitted to the Regional Board as follows:

Task

- a. Submit a study plan, acceptable to the Executive Officer, which will gather data sufficient to address antidegradation and to document that the treatment plant has the capacity to reliably treat the projected flow increase during both dry and wet weather periods. The study shall evaluate the treatment capacity of each unit process.
 - b. Following approval by the Executive Officer, commence work in accordance with the study plan and time schedule submitted pursuant to Task 4a.
 - c. Submit final report documenting the results of the accepted plan described in Task 4a. The report shall include a schedule for planning, design, and construction of required upgrades and /or additional process units to reliably treat projected increases in flows.
5. **Compliance With Acute Toxicity Effluent Limitations:** Acute toxicity requirements are contained in Effluent Limitation B.5. of this Order, and shall be conducted in accordance with the following:
 - a. From permit adoption date to no later than August 31, 2002;
 - (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96 hour continuous flow-through bioassays
 - (2) Test organisms shall be fat head minnows and three-spined stickbacks unless specified otherwise in writing by the Executive Officer.

- (3) All bioassays shall be performed according to the "*Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*," 3rd Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- b. From September 1, 2002, or earlier;
- (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays, or static renewal bioassays. If the Discharger will use static renewal tests, they must submit a technical report identifying the reasons why flow-through bioassay is not feasible using the approved EPA protocol (4th Edition).
 - (2) Test organisms shall be fat head minnows or rainbow trout unless specified otherwise in writing by the Executive Officer.
 - (3) All bioassays shall be performed according to the "*Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*," 4th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- c. The Executive Officer may consider allowing compliance monitoring with only one fish species (the most sensitive of the two), if the discharger can document that the acute toxicity limitations, specified above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of the two species.
6. **Toxicity Reduction Evaluation (TRE) for Acute Toxicity:** If there is a consistent violation of the acute toxicity effluent limitation, the discharger shall conduct a TRE, which shall initially involve a toxicity identification evaluation (TIE). The toxicity identification work shall begin as soon as it becomes apparent that a consistent violation has occurred. In order to most effectively track down the cause of a violation, review of then-current plant data and functioning of each process unit, and efforts to acquire additional samples of wastewater for analyses must be initiated immediately.

Conditions of the plant may change from day to day; therefore, it is important to begin the violation evaluation as soon as possible. Samples shall be analyzed for any/all constituents that may be contributing to the acute toxicity violation. As specified in the Self-Monitoring Program, Part A, Section C.2.d, the bioassay test shall be re-initiated once the violation has been noticed, and continued until compliance with the acute toxicity requirement can be demonstrated.

The objective of the TIE shall be to identify plant upset or poor functioning of any process unit, and/or chemical or combination of chemicals that is/are causing the observed toxicity. As sources of toxicity are identified, the discharger shall continue the TRE by evaluating alternative strategies for reducing or eliminating the cause of toxicity from the discharge. The Board recognizes that identification of causes of acute toxicity may not be successful in all cases. Where there is discretion, consideration of

enforcement action by the Board will be based in part on the discharger's action in identifying and reducing sources of consistent toxicity.

7. **Cyanide Data Collection Requirements:** The Discharger shall participate in a regional discharger-funded effort to conduct a study for cyanide data collection. The Discharger is required to fully participate in the cyanide study, which will include submission of a final report to the Board by May 18, 2003. The Board intends to include, in a subsequent permit revision, a revised final cyanide limit based on the study as an enforceable limit.
8. **SSO / TMDL Participation Requirement:** The Discharger shall participate in the development of a TMDL or SSO for mercury and cyanide. By January 31 of each year, the Discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures for mercury and development of TMDLs or SSOs.
9. **Optional Copper Translator Study:** In order to develop information that may be used to establish a water quality based effluent limit based on dissolved copper criteria, the Discharger may utilize RMP data from stations nearest the Discharger's outfall and /or implement a sampling plan to collect data for development of a dissolved to total copper translator. If the Discharger chooses to proceed with the study, this work shall be performed in accordance with the following tasks:
 - a. **Translator Study Plan:** The Discharger shall submit a study plan, acceptable to the Executive Officer, for collection of data that can be used for establishment of a dissolved to total copper translator. After Executive Officer approval or within 60 days of submission of the Study Plan, the Discharger shall begin implementing the study plan. The study plan shall provide for development of translators in accordance with U.S. EPA guidelines and any relevant portions of the Basin Plan, as amended.
 - b. **Translator Final Report:** The Discharger shall conduct the translator study by utilizing sampling data approximate to the discharge point and in the vicinity of the discharge point. The Discharger shall submit a report, acceptable to the Executive Officer, documenting the results of the copper translator study. The report may include any other site-specific information that the Discharger would like the Board to consider in developing a water quality based effluent limitation for copper.

If the discharger chooses to conduct the copper translator study, the study shall be completed two years from the adoption date of this Order.

10. **Receiving Water Beneficial Use Study and Schedule:** The Discharger may conduct a receiving water beneficial use study to assess the appropriateness of testing for fecal coliform instead of total coliform concentrations in compliance with the Basin Plan Coliform objectives. Depending on the results of the final study, the permit may be amended to specify either fecal or total Coliform limits.

Task

Compliance Date

- a. Submit a Receiving Water Study Plan, acceptable to the

March 1, 2002

Executive Officer, to include, but not be limited to, a receiving water coliform study, and tasks and schedules necessary to assess beneficial uses attributed to the outfall.

- | | |
|--|---|
| b. Following approval by the Executive Officer, commence work in accordance with the study plan and time schedule submitted pursuant to Task 10a. | 2 months after Executive Officer approval. |
| c. Submit results of the receiving water Coliform study and document adverse impacts, if any, on attributed beneficial uses of the outfall location by discharging fecal coliform. | 6 months after Executive Officer approval. |
| d. Submit a final report, acceptable to the Executive Officer, documenting the results of the beneficial use investigation described above. | 12 months after Executive Officer approval. |
11. **Regional Monitoring Program:** The Discharger shall continue to participate in the Regional Monitoring Program (RMP) for trace substances in San Francisco Bay in lieu of more extensive effluent and receiving water self-monitoring requirements that may be imposed.
12. **Operations and Maintenance Manual, Review and Status Reports:** The Discharger shall annually or within 90 days of completion of any significant facility or process changes, review and update as necessary, its Operation and Maintenance Manual. The Discharger shall submit to the Board, by April 15 of each year, a letter describing the results of the review process including an estimated time schedule for completion of any revisions deemed necessary, and a description of copy of any completed revisions.
13. **Contingency Plan:** Annually, the discharger shall review and update as necessary, its Contingency Plan as required by board Resolution 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. Plan revisions, or a letter stating that no changes are needed, shall be submitted to the Board by April 15 of each year.
14. **Wastewater Facilities, Review and Evaluation, and Status Reports:** The Discharger shall implement a program to regularly review and evaluate its wastewater collection, treatment and disposal facilities in order to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the discharger's service responsibilities. A Treatment Facilities Evaluation Program report discussing the status of this evaluation program, including any recommended or planned actions, shall be submitted to this Board by April 15 of each year.
15. **Standard Provisions and Reporting Requirements:** The Discharger shall comply with all applicable items of the attached "*Standard Provisions and Reporting Requirements*"

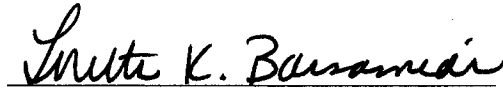
dated August 1993, or any amendments thereafter. If there are any conflicts between the permit and the Standard Provisions, the permit supersedes the Standard Provisions.

16. **Optional Mass Offset:** If the Discharger wishes to pursue a mass offset program, a mass offset plan for reducing 303(d)-listed pollutants to the same receiving water body needs to be submitted for Board approval. This Order may be modified by the Board to allow an acceptable mass offset program.
17. **New Water Quality Objectives:** As new or revised water quality objectives come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional or site-specific), effluent limitations in this permit will be modified as necessary to reflect updated water quality objectives. Adoption of effluent limitations contained in this permit is not intended to restrict in any way future modifications based on legally adopted water quality objectives.
18. **Change in Control or Ownership:** In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the discharger, the discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board office.

To assume operation of this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. (see Standard Provisions & Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

19. **Permit Re-opener:** The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will or have the potential to cause or contribute to adverse impacts on water quality and /or beneficial uses of the receiving waters.
20. **NPDES Permit:** This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on October 1, 2001, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.
21. **Order Expiration and Reapplication:**
 - a. This Order expires on September 30, 2006.
 - b. In conformance with Title 23, Section 2235.1, of the California Code of Regulations and the applicable federal regulations, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 19, 2001.



LORETTA K. BARSAMIAN

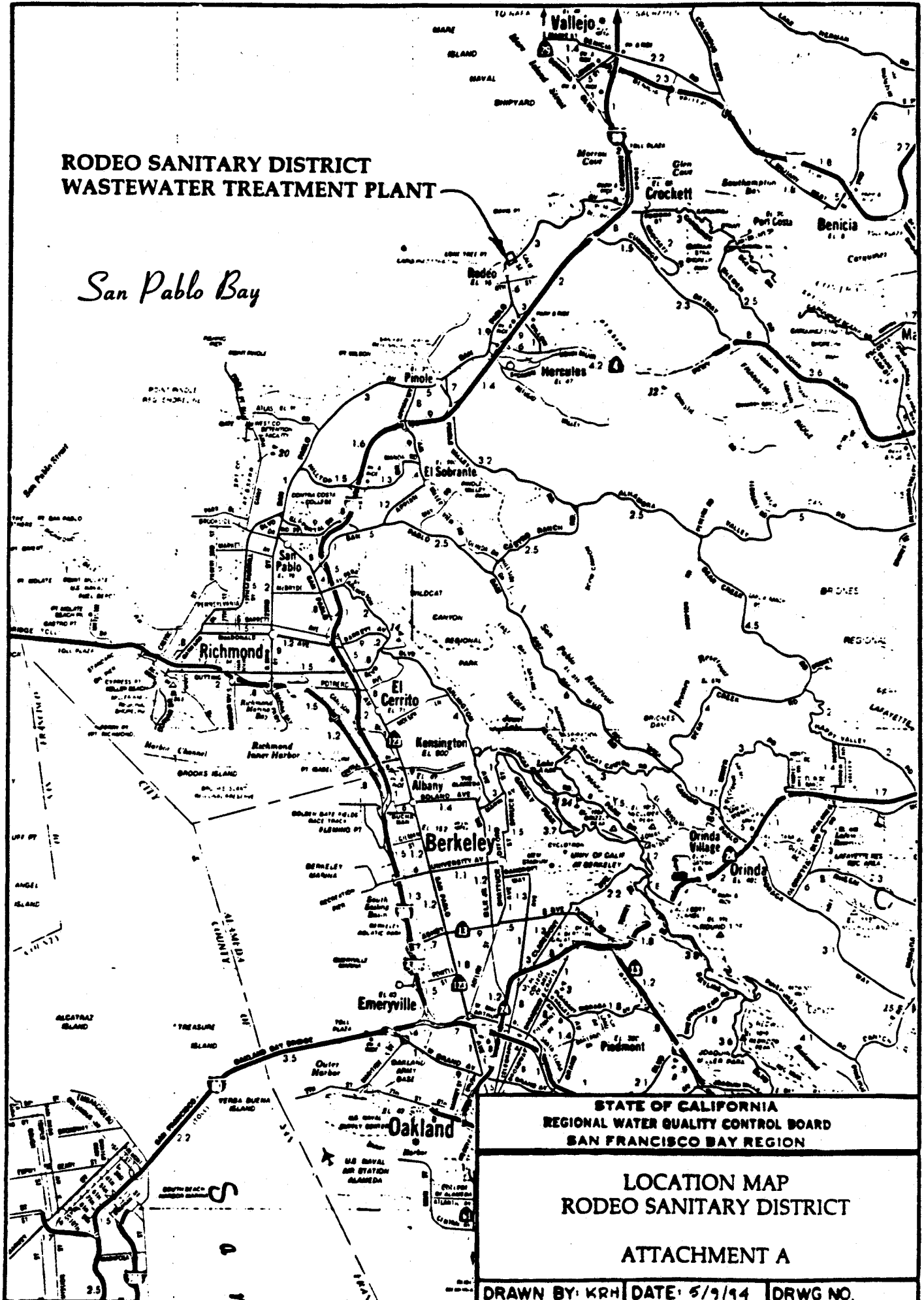
Executive Officer

Attachments:

- a. Discharge Facility Location Map
- b. Discharge Facility Treatment Process Diagram
- c. Self-Monitoring Program, Part A (August 1993) and Part B
- d. Fact Sheet
- e. Standard Provision and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993
- f. Resolution 74-10

**RODEO SANITARY DISTRICT
WASTEWATER TREATMENT PLANT**

San Pablo Bay



Attachment C

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM

FOR

**PINOLE-HERCULES WATER POLLUTION CONTROL PLANT
PINOLE, CONTRA COSTA COUNTY**

NPDES NO. CA0037796
ORDER NO. 01-106

CONSISTS OF

PART A

(Adopted August 1993)

&

PART B

(Adopted September 19, 2001)

PART B

PINOLE-HERCULES WATER POLLUTION CONTROL PLANT

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT

<u>Station</u>	<u>Description</u>
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

<u>Station</u>	<u>Description</u>
E-001	At the Pinole-Hercules Water Pollution Control Plant effluent wet well down stream of the dechlorination point (May be the same as E-001-D).
E-001-D	At any point in the disinfection facilities for Waste E-001, at which point adequate contact with the disinfectant is assured.
E-001-S	At any point in the treatment and disposal facilities following dechlorination.
E-002	At any point in the shallow water outfall between the Pinole-Hercules Water Pollution Control Plant overflow and point of discharge.

C. LAND OBSERVATIONS

<u>Station</u>	<u>Description</u>
P-1 through P-"n"	Located at the corners and midpoints of the perimeter fence line surrounding the treatment facilities. (A sketch showing the location of these stations will accompany each annual report).

D. OVERFLOWS AND BYPASSES

<u>Station</u>	<u>Description</u>
O-1 through O-"n"	Bypass or overflows from manholes, pump stations, and collection systems.

NOTES:

1. A map and description of each known or observed overflow or bypass shall accompany each monthly report. A summary of these occurrences and their locations shall be included with the Annual Report for each calendar year.
2. Each occurrence of a bypass or overflow shall be reported to the Regional Board in accordance with the reporting requirements specified in Sections F.1 and F.2 of Self-Monitoring Program Part A.

E. SLUDGE

The Discharger shall analyze sludge as necessary to comply with State and Federal sludge regulations for disposal to land.

II. SCHEDULE OF SAMPLING AND ANALYSIS

- A. The schedule of sampling and analyses shall be that given in Table 1 (attached)
- B. Sample collection, storage, and analyses shall be performed according to requirements in the latest 40 CFR 136, in the Order, or as specified by the Executive Officer.

III. REPORTING REQUIREMENTS

- A. General Reporting Requirements are described in Section C of this Board's "Standard Provisions and Reporting Requirements," dated August 1993.
- B. Self-Monitoring Reports for each calendar month shall be submitted monthly, by the 30th day of the following month. The required contents of these reports are described in Section F.4. of Part A.
- C. An Annual Report for each calendar year shall be submitted to the Board by February 15 of the following year. The required contents of the annual report are described in Section F.5. of Part A.
- D. Any Overflow, bypass or significant non-compliance incident that may endanger health or the environment shall be reported according to Section F.1. and F.2 of Part A. The date, time, duration, location, and estimated volume of each bypass or overflow shall be included in each monthly report.

IV. MISCELLANEOUS REPORTING

- A. The Discharger shall retain and submit (when required by the Executive Officer) the following information concerning the monitoring program for organic and metallic pollutants:
 1. Description of sample stations, times, and procedures.
 2. Description of sample containers, storage, and holding time prior to analysis.

3. Quality assurance procedures together with any test results for replicate samples, sample tanks, and any quality assurance tests, and the recovery percentages for the internal surrogate standard.
- B. The Discharger shall submit in the monthly self-monitoring report the metallic and organic test results together with the detection limits (including unidentified peaks). All unidentified (non-Priority Pollutant) peaks detected in the U.S. EPA 624, 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at $<10 \mu\text{g/L}$ based on the nearest internal standard may be appropriately grouped and identified together as aliphatic, aromatic and unsaturated hydrocarbons. All other hydrocarbons detected at $>10 \mu\text{g/L}$ based on the nearest internal standard shall be identified and semi-quantified.

V. MODIFICATIONS TO PART A

The second sentence of paragraph C.2(a) is revised as follows: "At least one sampling day in each seven shall reflect, if possible, one day of peak loading. Sampling reflecting peak loading shall be conducted during major treatment unit operational shutdown or startup."

The addressee for the submittal of Self-Monitoring Reports in paragraph F.4(e) is changed from Executive Officer to NPDES Division.

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Order No. 01-106
2. Is effective as of October 1, 2001.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer, pursuant to 40 CFR 122.62, 122.63 and 124.5.



Loretta K. Barsamian
Executive Officer

Attachments:

Table 1-Schedule of Sampling, Measurement and Analysis
Part A, dated August 1993

TABLE 1
SCHEDULE OF SAMPLING, MEASUREMENT AND ANALYSIS

<u>Station</u>	<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Frequency of Analysis</u>
A-001	Flow Rate ⁽¹⁾	MGD	Continuous	Continuous
	CBOD ₅ , 20°C ⁽²⁾	mg/l	24-hr composite	2 times/week
	TSS	mg/l	24-hr composite	2 times/week
E-001	Flow Rate ⁽¹⁾	MGD	Continuous	Continuous
	CBOD ₅ , 20°C ⁽²⁾	mg/l & kg/d	24-hr composite	2 times/week
	TSS	mg/l & kg/d	24-hr composite	5 times/week
	Oil & Grease ^(3,4)	mg/l & kg/d	Grab	Every 2 weeks
	Settleable Matter	ml/l-hr	Grab	Monthly
	Chlorine Residual ⁽⁵⁾	mg/l	Continuous	Continuous
	Turbidity	NTU	Grab	Monthly
	pH ⁽²⁰⁾	Std Units	Continuous	Continuous
	Temperature	°F	Grab	Daily
	Dissolved Oxygen	mg/l and % saturation	Grab	Daily
	Dissolved Sulfides ⁽⁷⁾	mg/l	Grab	Daily
	Arsenic ⁽⁸⁾	µg/l & kg/d	24-hr Composite	Quarterly
	Cadmium	µg/l & kg/d	24-hr Composite	Quarterly
	Chromium Total or Hexavalent	µg/l & kg/d	Grab	Quarterly
	Lead	µg/l & kg/d	24-hr Composite	Quarterly
	Silver	µg/l & kg/d	24-hr Composite	Quarterly
	Zinc	µg/l & kg/d	24-hr Composite	Quarterly
	Nickel	µg/l & kg/d	24-hr Composite	Quarterly
	Selenium ⁽¹⁰⁾	µg/l & kg/d	24-hr Composite	Quarterly
	Copper	µg/l & kg/d	24-hr Composite	Monthly
	Cyanide ⁽⁹⁾	µg/l & kg/d	Grab	Monthly
	Mercury	µg/l & kg/d	Grab	Monthly
	PAHs ⁽¹¹⁾	µg/l & kg/d	Grab	Semi-Annual
	Nitrogens (as N) ⁽¹⁸⁾	µg/l & kg/d	24-hr Composite	Quarterly
	U.S. EPA 608 ^(12,16,17)	µg/l & kg/d	Grab	Semi-Annual
	U.S. EPA 624 ^(13,17)	µg/l & kg/d	Grab	Semi-Annual
	U.S. EPA 625 ^(13,17)	µg/l & kg/d	Grab	Semi-Annual
	U.S. EPA 1613 ^(14,17)	µg/l & kg/d	Grab	Semi-Annual
	U.S. EPA 614 ^(15,17)	µg/l & kg/d	Grab	Semi-Annual

<u>Station</u>	<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Frequency of Analysis</u>
E-001-D	Total Coliform ⁽⁶⁾	MPN/100 ml	Grab	3 times /week
E-001-S	Flow Rate ⁽¹⁾	MGD	Continuous	Continuous
	Acute Toxicity ⁽¹⁹⁾	Survival	24-hr Composite	Monthly
	Chlorine Residual ⁽⁵⁾	mg/l	See Footnote 5	See Footnote 5
	pH ⁽²⁰⁾	Std Units	Continuous	Continuous
	Temperature	°F	Grab	Daily
	Dissolved Oxygen	mg/L and % saturation	Grab	Daily
	Total Sulfides ⁽⁷⁾	mg/l	Grab	Daily
E-002	Flow Rate ⁽¹⁾	MGD	Continuous	Each Occurrence
	CBOD ₅	mg/l & kg/d	See Footnote 21	Each Occurrence
	TSS	mg/l & kg/d	See Footnote 21	Each Occurrence
	Oil & Grease ^(3,4)	mg/l & kg/d	Grab	Each Occurrence
	Settleable Matter	ml/l-hr	Grab	Each Occurrence
	Chlorine Residual ⁽⁵⁾	mg/l	See Footnote 5	See Footnote 5
	Turbidity	NTU	Grab	Each Occurrence
	pH	Std Units	See Footnote 21	Each Occurrence
	Temperature	°F	Grab	Each Occurrence
	Dissolved Oxygen	mg/l and % saturation	Grab	Each Occurrence
	Total Sulfides	mg/l	Grab	Each Occurrence
	Arsenic ⁽⁸⁾	µg/l & kg/d	See Footnote 21	Each Occurrence
	Cadmium	µg/l & kg/d	See Footnote 21	Each Occurrence
	Chromium Total or Hexavalent	µg/l & kg/d	See Footnote 21	Each Occurrence
	Lead	µg/l & kg/d	See Footnote 21	Each Occurrence
	Silver	µg/l & kg/d	See Footnote 21	Each Occurrence
	Zinc	µg/l & kg/d	See Footnote 21	Each Occurrence
	Nickel	µg/l & kg/d	See Footnote 21	Each Occurrence
	Selenium ⁽¹⁰⁾	µg/l & kg/d	See Footnote 21	Each Occurrence
	Copper	µg/l & kg/d	See Footnote 21	Each Occurrence
	Cyanide ⁽⁹⁾	µg/l & kg/d	See Footnote 21	Each Occurrence
	Mercury	µg/l & kg/d	See Footnote 21	Each Occurrence
	PAHs ⁽¹¹⁾	µg/l & kg/d	See Footnote 21	Each Occurrence
All P Stations	Standard Observations		Visual	Monthly

All O
Pinole-Hercules WPCP
NPDES Permit No. 01-106
SMP Part B

Stations	Observations	Visual	Each Occurrence
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Footnotes for Table 1:

1. Flows shall be monitored continuously, and the following shall be reported in monthly self-monitoring reports:
 - a. Influent, average daily flow (A-001);
 - b. Influent, maximum and minimum flow rates and times of occurrence (A-001);
 - c. Effluent, average daily flow (E-001 & E-002);
 - d. Effluent, maximum and minimum flow rates and times of occurrence (E-001 & E-002);
 - e. Total Effluent Flow Volume
2. The percent removal of BOD and TSS shall be reported for each calendar month, in accordance with Effluent Limitation B.5.
3. Oil and Grease sampling shall consist of three grab samples taken at two-hour intervals during the sampling day, with each grab being collected in a glass container. The entire volume of each sample shall be composited prior to analysis. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite wastewater sample for extraction and analysis.
4. Grab samples shall be collected coincident with samples collected for the analysis of regulated parameters. In addition, the grab samples must be collected in glass containers.
5. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. The Discharger shall sample for chlorine residual either continuously or every 2 hours. Total chlorine dosage (kg/day) shall be recorded on a daily basis.
6. When replicate analyses are made of a Coliform sample, the reported result shall be the arithmetic mean of the replicate analysis sample.
7. Sulfide analysis shall be run when dissolved oxygen concentrations fall below 2.0 mg/l.
8. Arsenic must be analyzed for by the atomic absorption, gaseous hydride procedure (U.S. EPA method No. 206.3/Standard Method No. 303E). Alternative methods of analysis must be approved by the Executive Officer.
9. The Discharger may, at its own option, analyze for cyanide as Weak Acid Dissociable (WAD) cyanide using protocols specified in Standard Methods No. 4500-CN-I, latest edition.
10. Selenium must be analyzed for only by the atomic absorption, gaseous hydride procedure (U.S. EPA method No. 270.3/Standard Method No. 303E) Alternative methods of analysis must be approved by the Executive Officer.

11. Polynuclear aromatic hydrocarbons, PAHs, shall be analyzed using the latest version of U.S. EPA Method 610 (8100 or 8300). The Discharger shall attempt to achieve the lowest detection limits commercially available. Note that the samples must be collected in amber glass containers. These samples shall be collected for the analysis of the regulated parameters. An automatic sampler, which incorporates glass sample containers, and keeps the samples refrigerated at 4°C, and protected from light during compositing may be used. The 24-hour composite samples may consist of eight grab samples collected at three-hour intervals. The analytical laboratory shall remove flow-proportioned volumes from each sample vial or container for the analysis.
12. The discharger shall attempt to achieve the lowest detection limits commercially available using the latest versions of U.S. EPA Methods 608 (or 8080).
13. The latest versions of U.S. EPA Methods 624 (or 8240), and 625 (or 8270) shall be used.
14. The latest version of U.S. EPA Method 1613 shall be used.
15. The Discharger shall attempt to achieve the lowest detection limits commercially available using the latest version of U.S. EPA method 614.
16. The Discharger shall attempt to achieve the lowest detection limits commercially available using the latest version of U.S. EPA method 608 to monitor for the presence for Chlordane in its treated effluent.
17. Semi-annual monitoring for these parameters shall be conducted at different times during each year to account for potential differences in loading and/or concentrations due to seasonal variability. One sample shall be taken during wet weather discharge and the other during dry weather.
18. Ammonia (as N) shall be measured as Total Ammonia; the unionized fraction shall be calculated based on the total ammonia, pH, total dissolved solids or salinity, and temperature.
19. Flow-through bioassays shall be conducted with the two of the most sensitive fish species determined from concurrent screenings of three-spine stickleback, rainbow trout and fathead minnow pursuant to Provision E.7. of this Order. The Executive Officer may allow compliance monitoring with only one fish specie (the most sensitive, if known) provided that the Discharger conducts sufficient screening with rainbow trout. The following constituents shall be measured on a daily basis, and reported for the bioassay sample stream: pH, Temperature, Dissolved Oxygen, and Ammonia Nitrogen.
20. Monitoring for pH shall be done continuously; the minimum and maximum pH values for each day shall be reported in monthly self-monitoring reports.
21. Both Grab samples and 24-hour composite samples shall be collected. For discharges with a duration of 24 hours greater, compliance shall be determined with the composite sample; Grab sample results shall be used for discharges less than 24 hours. Note special requirement for PAH composites in footnote 11.

Attachment D

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1515 CLAY STREET, SUITE 1400
OAKLAND, CA 94612

FACT SHEET

REISSUANCE OF
WASTE DISCHARGE REQUIREMENTS
FOR DISCHARGE TO STATE WATERS

FOR

PINOLE-HERCULES WATER POLLUTION CONTROL PLANT
PINOLE, CONTRA COSTA COUNTY

NPDES PERMIT NO. CA0037796

NOTICE:

Written Comments:

- Interested persons are invited to submit written comments concerning this draft permit
- Comments should be submitted to the Regional Board no later than: August 27, 2001.
- Comments should be addressed to the attention of Joseph G. Damas, Jr.

Public Hearing

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at Elihu Harris State Building, 1515 Clay Street, Oakland, CA; 1st floor auditorium.
- This meeting will be held on: September 19, 2001, starting at 9:00 a.m.

Additional Information

- For additional information about this matter, interested persons should contact Regional Board staff: Mr. Joseph G. Damas, Phone (510) 622-2413; e-mail jgd@rb2.swrcb.ca.gov

I. Discharger and Permit Application:

- A. Discharger: The City of Pinole owns and operates the Pinole-Hercules municipal wastewater treatment plant, and provides secondary level treatment for domestic wastewater collected within the cities of Pinole and Hercules. The Discharger's service area has a present population of about 38,500 people.
- B. The Discharger has applied to the California Regional Water Quality Control Board, San Francisco Bay Region (Board) for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

II. Discharge Description:

A. Facility Description

1. **Location:** The Discharger owns and operates the municipal wastewater treatment plant located at 11 Tennent Avenue in Pinole, Contra Costa County. A map showing the location of the facility is included in Attachment A.
2. **Service Area and Population:** The plant provides secondary level treatment for domestic wastewater collected within the cities of Pinole and Hercules. The Discharger's service area currently has a population of about 38,500 people.
3. **Wastewater Treatment Process:** The wastewater treatment process at the facility consists of pretreatment by screening, primary clarification, biological treatment using activated sludge, secondary clarification, disinfection, and dechlorination.
4. **Discharge Classification:** The U.S. Environmental Protection Agency (USEPA) and the Board have classified this discharge as a major discharge.

B. Effluent Description

1. **Discharge Volume and Plant Capacity:** The treatment plant has an average dry weather flow design capacity of 4.06 million gallons per day (mgd), and can treat up to 10.3 mgd during the wet weather flow period. In 2000, the plant discharged an average dry weather flow of 2.29 mgd, and an annual average flow of about 2.41 mgd. To accommodate growth from the City of Hercules, the City of Pinole expects to expand its plant from its present capacity of 4.06 mgd to 5.00 mgd within the next 2-4 years. A preliminary study indicates that the plant will need three additional secondary clarifiers, one new digester, larger capacity influent pumps, and an additional blower to accommodate the proposed flow increase.
2. **Discharge Location:** Treated wastewater (Waste 001) is currently discharged into San Pablo Bay, a water of the State and the United States, through a submerged deepwater diffuser about 3,600 feet offshore at a depth of about 18 feet below mean lower low water (Latitude 38°03'06"; Longitude 122°14'55"). The outfall (E-001) is used jointly by Pinole and the cities of Rodeo and Hercules. An eductor system at the Rodeo Sanitary District is used to convey treated wastewater from Rodeo Sanitary District through the outfall. Excess secondary treated effluent (Waste 002) from the Pinole treatment plant is released through a shallow water outfall (E-002) to San Pablo Bay (Latitude 38°00'47"; Longitude 122°17'45"); the latest release through this outfall took place in February 2001.
3. **Shallow Water Outfall:** The Discharger uses its shallow water outfall after advance notice to the Regional Board approximately 3 to 4 times. Use of the outfall is typically for no more than 23 hours when the Discharger's effluent flows during wet weather conditions exceed 9.2 mgd. The land outfall leading to the deep-water outfall would need to be replaced to allow flows greater than 9.2 mgd. The shallow water outfall may also need to be used during scheduled or unscheduled repairs to

the land outfall and the deep-water outfall system. This draft Permit does not permit the discharge of wastewater through the shallow water outfall.

4. The general quality of the treated effluent discharged from the plant through E-001, based on information provided in the application and self-monitoring reports from four years of data dating from January 1997 through December 2000 is as follows:

Constituent	Average	Daily Maximum	Daily Minimum
Biochemical Oxygen Demand, mg/l	7.3	26	<2.4
Total Suspended Solids, mg/l	15.3	66	1.6
Settleable Matter, ml/l/hr	<0.1	25	<0.1
PH (standard units)	--	7.4	5.4

The quality of the treated effluent from the City of Pinole for metals and organic compounds measured from 1997 through 2000 is as follows (all units are in mg/l):

Constituent	Maximum Observed Concentration or Lowest Detection Limit	Water Quality Objective
Arsenic	5	36
Cadmium	0.2	9.3
Chromium	2	50
Copper	8	3.1
Lead	3	5.6
Mercury	0.2	0.025
Nickel	7	7.1
Selenium	0.65	5
Silver	0.6	2.3
Zinc	40	58
Cyanide	6	1
Poly Aromatic Hydrocarbons	0.3	15
Acenaphthylene	0.3	No Obj.
Anthracene	0.3	110,000
1,2-Benzo(a)anthracene	0.3	0.049
3,4-Benzofluoranthene	0.3	0.049
Benzo(k)fluoranthene	0.3	0.049
1,12-Benzo(g,h,i)pyrene	0.3	No Obj.
Benzo(a)pyrene	0.3	0.049
Chrysene	0.3	0.049
Dibenzo(ah)anthracene	0.3	0.049
Fluorene	0.3	14,000
Indeno(1,2,3-cd)pyrene	0.3	0.049
Phenanthrene	0.3	No Obj.
Pyrene	0.3	11,000
Phenol	36	4,600,000

C. Solids Disposal Description

Wastewater solids from treatment plant operations is thickened, anaerobically digested, and sent to a centrifuge for dewatering. The resulting dewatered sludge is currently disposed of at the Richmond Landfill in Contra Costa County.

III. General Rationale

The following is a summary of the general rationale for the Tentative Order. Section IV of this document contains specific rationale for each effluent and receiving water limitation, prohibition, and provision, with reference to each item as it appears in the Tentative Order.

- *Federal Water Pollution Control Act*, as amended (herein referred to as the Clean Water Act)
- *Federal Code of Regulations*, Title 40 – Protection of the Environment, Chapter 1, U.S. Environmental Protection Agency (USEPA), Subchapter D, Water Programs, Parts 122-129 (hereinafter referred to as 40 CFR Specific Part Number).
- *Water Quality Control Plan*, San Francisco Bay Basin (2), June 21, 1995 (hereinafter referred to as the Basin Plan). The Basin Plan was approved by the State Water Resources Control Board (State Board) and the Office of Administrative Law on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan identifies beneficial uses and water quality objectives for waters of the State, including surface and ground waters.
- *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California*, Federal Register, Volume 65, Number 97, 16 May 2000, Pages 31681+ (hereinafter referred to as the California Toxics Rule, CTR).
- *Quality Criteria for Water*, USEPA 440/5-86-001, 1986 (hereinafter referred to as the Gold Book).
- *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, Dated May 18, 2000 (hereinafter referred to as State Implementation Policy, SIP).
- *Technical Support Document for Water Quality-Based Toxics Control*, EPA/505/2-90-001, March 1991 (hereinafter referred to as the TSD).
- *National Toxics Rule*, 57 FR 60848, December 22, 1992 (hereinafter referred to as the NTR)

IV. Specific Rationale

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that water-quality based effluent limits (WQBELs) in re-issued permits are at least as stringent as in the previous permit. Therefore, some of the requirements in the proposed Order are based on limits specified in the previous Order.

There are several other factors affecting the development of limitations and requirements in the proposed Order. These are discussed as follows:

Impaired Water Bodies in 303(d) List

The U.S. EPA Region 9 approved the State's 303(d) list of impaired water bodies on May 12, 1999. The list was prepared in accordance with section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. In a November 12, 1999 letter to the Board, the U.S.EPA clarified its NPDES requirements regarding the discharge of 303(d)-listed pollutants. U.S.EPA objected to the use of dilution credit in reasonable potential analysis for all 303(d)-listed pollutants. U.S.EPA required interim concentration limits and performance-based mass limits with a compliance schedule to be in effect until final effluent limits are adopted. U.S. EPA required the inclusion of appropriate provisions for waste minimization and source control.

The following section provides a specific rationale for the proposed permit requirements in the Tentative Order:

A. Discharge Prohibitions:

1. Prohibition A.1 (no discharges other than as described in the Permit):
This condition prohibits discharging treated wastewater in a manner different from that described in the findings of this Order. It is based on the previous permit and BPJ.
2. Prohibition A.2 (no discharge of Waste 001 receiving less than 45:1 dilution):
This condition prohibits discharges of Waste E001 not receiving 45:1 dilution. There are viable shellfish beds in San Pablo Bay that could be affected by the discharged wastewater. To protect the shellfish beds, the Board has required, and will continue to require, that the wastewater receive an initial dilution of at least 45:1 in the receiving water. It is based on the current permit condition. The Basin Plan (Chapter 4, Discharge Prohibition No. 1) requires a minimum dilution of 10:1).
3. Prohibition A.3 (no bypass or overflow of untreated or partially treated wastewater): This condition prohibits the discharge of untreated and partially treated wastes. This prohibition does not apply to conditions stated in 40CFR122.41(m).
4. Prohibition A.4 (no discharges other than stormwater to storm drains): This condition prohibits the discharge of water, materials, or wastes other than

stormwater, which are not otherwise authorized by a NPDES permit. It is based on the existing permit and BPJ.

5. Prohibition A.5 (stormwater runoff): This condition states that storm water runoff from the facilities shall be discharged to the headworks of the treatment plant.

B. Effluent Limitations:

1. Effluent Limitations B.1 (Conventional Pollutant Limits): These are numeric effluent limitations for carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), oil and grease, settleable matter, and total chlorine residual. These are based on the Basin Plan and the existing Permit.
2. Effluent Limitations B.2 (85% removal, CBOD and TSS): This effluent limit requires that the Discharger's treatment system shall remove at least 85% of the CBOD and TSS presented in the influent. It is based on the existing permit and Basin Plan (Chapter 4, Table 4-2).
3. Effluent Limitations B.3 (Total Coliform Bacteria): This effluent limit requires that the Most Probable Number (MPN) of total Coliform bacteria in any five (5) consecutive samples shall not exceed 240 MPN/100ml: and any single sample shall not exceed 10,000 MPN/100ml. It is based on the existing permit and Basin Plan (Chapter 4, Table 4-2).
4. Effluent Limitations B.4 (pH): The effluent limitation for the discharge of Waste 001 shall not have a pH value less than 6.0 nor greater than 9.0. This is based on the existing permit and the Basin Plan (Chapter 4, Table 4-2).
5. Effluent Limitations B.5 (Whole Effluent Acute Toxicity): This effluent limit requires the survival of bioassay test organisms in a 96-hour bioassay of undiluted effluent shall comply with the following:
 - An 11-sample median value of not less than 90 percent survival; and
 - An 11-sample 90th percentile value of not less than 70 percent survival.

It is based on the existing permit and the Basin Plan (Chapter 4, Table 4-4).

6. Effluent Limitations B.6 (Mercury Mass Emission Limits): This effluent limit requires that the total mercury mass load from the discharge shall not exceed 0.102 kilograms per month (mg/month). See further mercury discussion below.
7. Effluent Limitations B.7 (Toxic Substances Effluent Limitations): Effluent limitations are included in this permit for selected toxic substances in order to protect the beneficial uses of the receiving waters. Effluent limitations for selected substances are necessary because they were detected in the plant effluent and, based on a Reasonable Potential Analysis (RPA) as discussed below, have been found to have reasonable potential to cause, or contribute to exceedance of a water quality objectives for the receiving water. 40CFR 122.44(d)(1)(I) requires the permit to include limits for all pollutants "which the Director determines are

or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.”

a. Reasonable Potential Analysis:

- (1) Water Quality Objectives: The RPA is calculated using the water quality objectives given in the California Toxics Rule and the Basin Plan.
- (2) Method: Reasonable Potential Analysis is conducted using the method prescribed in the State Implementation Policy.
- (3) Effluent Data: The RPA was based on effluent monitoring data for 1997 through 2000.
- (4) Background concentration: The RPA was based on monitoring data from the 1995 to 1999 Regional Monitoring Program for Yerba Buena Island and Richardson Bay stations (BC10 and BC30). The higher of the two station concentration results is used as the maximum observed background concentration.
- (5) Summary of Reasonable Potential Analysis (RPA) Determinations
The WQOs, Maximum Observed Effluent Concentration and reasonable potential conclusions from the RPA are listed in the following table for each constituent analyzed. All the data are in µg/l.

Constituent	Maximum Observed Concentration or Lowest Detection Limit	Water Quality Objective	Reasonable Potential
Arsenic	5	36	N
Cadmium	0.2	9.3	N
Chromium	2	50	N
Copper	8	3.1	Y
Lead	3	5.6	N
Mercury	0.2	0.025	Y
Nickel	7	7.1	N
Selenium	.65	5	N
Silver	0.6	2.3	N
Zinc	40	58	N
Cyanide	6	1	Y
Acenaphthylene	0.3	No Obj	CD
Anthracene	0.3	110,000	N
1,2,-Benzo(a)anthracene	0.3	0.049	DL
3,4-Benzofluoranthene	0.3	0.049	DL
Benzo(k)fluoranthene	0.3	0.049	DL
1,12-Benzo(g,h,i)pyrene	0.3	No Obj	CD
Benzo(a)pyrene	0.3	0.049	DL
Chrysene	0.3	0.049	DL
Dibenzo(ah)anthracene	0.3	0.049	DL
Fluorene	0.3	14,000	N

Indeno(1,2,3-cd)pyrene	0.3	0.049	DL
Phenanthrene	0.3	No Obj	CD
Pyrene	0.3	11,000	N
Phenol	36	4,600,000	N
Dieldrin	No data	0.00014	Y ¹
4,4-DDE	No data	0.00059	Y ¹
Other priority pollutants	No data	Various	CD

Table Definitions:

CD	= Cannot determine reasonable potential due to the absence of data
DL	= Detection limit above water quality objective
N	= No reasonable potential
No Obj	= No water quality objective available
Y	= Reasonable potential
Y ¹	= Reasonable potential due to ambient background. No effluent concentration data exist to calculate a WQBEL using Section 1.4 of the SIP. Effluent characterization study required.

(6) Organic Constituents With Limited Data: Reasonable Potential cannot be determined for various organic constituents (e.g., PCBs, semi-volatile organic compounds) because accurate estimations are not possible for a majority of the constituents due to water quality objectives or effluent limitations that are lower than current analytical techniques can measure. The Discharger will monitor for these constituents using analytical methods that provide the best detection limits reasonably feasible. If detection limits improve to the point where it is feasible to evaluate compliance with applicable water quality criteria, a reasonable potential analysis will be conducted to determine whether there is need to add numeric effluent limits to the permit or to continue monitoring.

(7) Monitoring: For constituents that do not show a reasonable potential to cause or contribute to exceedance of applicable water quality objectives, effluent limits are not included in the permit but continued monitoring is required as identified in the self-monitoring program of the permit. If significant increases occur in the concentrations of these constituents, the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases pose a threat to water quality.

(8) Permit Re-opener: The permit includes a reopener provision to allow numeric effluent limits to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a water quality objective. This determination, based on monitoring results, will be made by the Board.

b. *Calculation of Effluent Limitation:* The effluent limitations under this section of the permit are water quality based (WQBELs) for those pollutants not listed on the 303(d) list. For pollutants on the 303(d) list, the effluent limitations for discharges to San Pablo Bay are interim performance limits calculated using mean concentration plus three standard deviations. Final

WQBELs for 303(d) listed pollutants will be based on wasteload allocations (WLAs) derived from TMDLs.

- (1) Water Quality Objective: The effluent limit is calculated using the Water Quality Objectives given in the California Toxics Rule and the Basin Plan.
- (2) Dilution: Effluent limitations were calculated using a dilution ratio of 10:1 for non-bioaccumulative pollutants. Although the E-001 discharge achieves initial dilution greater than 10:1, this cautious approach to calculating effluent limitations has been taken based on BPJ for the following reasons. First, due to concern over the cumulative effects of multiple sources of pollutants to the estuary, it is reasonable to limit the mass loading of pollutants by limiting the dilution credit. Second, it is difficult to predict actual dilution in an estuary due to tidal circulation.

This conservative approach to setting a maximum dilution credit of 10:1 is also justified by recent monitoring of ambient estuary waters which has indicated exceedances of certain water quality criteria and sporadic episodes have been documented in technical reports including: *"Trace Elements in San Francisco Estuary: Results from a Preliminary Study in 1989-1990"* (Flegal et al., 1991), prepared by researchers from the University of California at Santa Cruz; *"Ambient Toxicity Characterization of San Francisco Bay and Adjacent Wetland Ecosystems"* (Anderson et al., 1990), prepared by researchers from Lawrence Berkeley Laboratory, University of California, and *"San Francisco Estuary Regional Monitoring Program for Trace Substances"* (1995+), by San Francisco Estuary Institute.

Copper and mercury are listed as pollutants causing waterbody impairment in the List of Impaired Water Bodies and Priorities for Development of Total Maximum Daily Loads for the San Francisco Bay Region, dated March 9, 1998. An interim monthly average effluent limit of 0.087 µg/l is established for mercury based on the performance of secondary treatment plants until TMDLs are completed. Sufficient data are not available to determine that the Discharger can comply with a SIP calculated AMEL of 0.019 µg/l or a MDEL of 0.044 µg/l.

- (3) Background Concentration: The background concentration used to calculate the effluent limit was from the 1992 to 1997 Regional Monitoring Program for Yerba Buena and Richardson Bay Stations (BC10 and BC30).

- (4) Summary of Effluent Limit Calculation:

Constituent	Daily Maximum	Average Monthly	Interim Daily Maximum	Interim Monthly Average	Basis
Copper	37	20			SIP
Mercury				0.087	BPJ, SIP, Basin Plan
Cyanide			12		BPJ, SIP

- c. *Effluent Limits Proposed to be Included in the Permit:* Based on RPA, copper, mercury, cyanide, 4,4 DDE and Dieldrin have been found to have reasonable potential to cause or contribute to exceedance of water quality objectives. Based on the RPA, effluent limits are proposed to be included in the permit for copper, mercury, and cyanide. No effluent data exists for 4,4 DDE or Dieldrin so monitoring is required to collect data necessary to calculate a limit in accordance with the State Implementation Policy.
- d. *Effluent Limits Proposed to be Deleted from the Permit:* Based on the RPA, arsenic, cadmium, chromium, lead, nickel, selenium, silver, zinc, PAHs, and phenol have been found to not have reasonable potential to cause or contribute to exceedance of water quality objectives.

The existing permit included effluent limits for the constituents identified above. Based on the RPA, effluent limits are proposed to be deleted from the permit for these constituents. Continued effluent monitoring for these constituents will be conducted, as identified in the self-monitoring program of the permit.

8. Copper – Further Discussion and Rationale for Effluent Limits:

- a. *Basis for Effluent Limitations:*
 - (1) Past Copper Limitations: The Discharger's past permit, Order 94-111, specified a limit for copper of 37 mg/l. This was based on the Basin Plan.
 - (2) Copper Limitation: The is Order establishes a maximum daily concentration limit of 37 µg/l and an average monthly concentration limit of 20 µg/l for copper based on the State Implementation Plan.
- b. *Effluent Limits:* As Copper has been determined to be an impairing pollutant on the 303(d) list, and since a RPA has determined there is reasonable potential for the discharge to contribute to a water quality exceedance, a WQBEL is required in this permit. The final WQBEL will be consistent with the wasteload allocation derived from a TMDL. The Discharger shall report mass emissions of copper each month on a year-round basis from both the influent and effluent. This data shall be used to develop a mass emission study as part of a region-wide TMDL effort for copper.

8. Mercury – Further Discussion and Rationale for Effluent Limits:

- a. *Mercury Water Quality Objectives:* For mercury, the national chronic criterion of 0.051 µg/l is based on the protection of human health. The criterion is intended to limit the bioaccumulation of methyl-mercury in fish and shellfish to levels that are safe for human consumption. As described in the Basin Plan, the saltwater objective is 0.025 µg/l.
- b. *Mercury Strategy:* Board staff is in the process of developing a plan to address control of mercury levels in San Francisco Bay including

development of a TMDL, appropriate water quality based effluent limits (WQBELs) for point source discharges and compliance with effluent limits

At present, it appears that the appropriate course of action is to apply mass loading limits to point source discharges, and focus mercury reduction efforts on more significant and controllable sources. While site-specific objectives or Total Maximum Daily Loads (TMDLs) are being developed, ambient receiving water conditions should be maintained. The permit requires the discharger to maximize control over influent mercury sources, with consideration of relative costs and benefits. The discharger is encouraged to continue working with other municipal dischargers to optimize both source control and pollution prevention efforts and to assess alternatives for reducing mercury loading to, and protecting beneficial uses of receiving waters.

- c. *Effluent Concentration Limit.* The permit includes an interim monthly average limit of 0.087 µg/l. The final WQBEL will be based on the WLA derived from the TMDL for mercury. The interim monthly average limit for mercury is based on staff's analysis of the performance of over 20 secondary treatment plants in the Bay Area. This analysis is described in a Board staff report titled "Staff Report, Statistical Analysis of Pooled Data from Regionwide Ultraclean Mercury Sampling." The objective of the analysis is to provide an interim concentration limit that characterizes facility performance using only ultra-clean data and that maintains current receiving water quality. Based on Board staff's report titled "Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA," dated June 30, 2000, municipal sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond those required by this permit or a separate 13267 letter.
 - d. *Mass Emission Limit.* The permit includes a mass-based loading limit (mass emission limit) for mercury of 0.102 kilograms per month. This limit is based on the average mass loading plus 3 standard deviations using effluent data from 1997 through 2000.
9. Cyanide - Further Discussion and Rationale for Effluent Limits:
- a. The CTR specifies that the salt water Criterion Chronic Concentration (CCC) of 1 µg/l for cyanide is applicable to San Pablo Bay. This CCC value is below the presently achievable reporting limit (ranges from approximately 3 to 5 µg/l).
 - b. The background data set was very limited as there was only six dissolved and six total data points which were all non detects (<1µg/l) collected in 1993. The non-detect value (<1µg/l) is equivalent to the WQO (1 µg/l) and causes the dilution portion of the final effluent limit equation to be eliminated, thereby giving no dilution. The calculated WQBELs for cyanide, presented in the fact sheet, are a point of reference to conduct a feasibility study for immediate compliance. Cyanide is a regional problem associated with analytical protocol for cyanide analysis due to matrix interferences. A body

of evidence exists to show that cyanide measurements in effluent may be an artifact of the analytical method. This question is being explored in a national research study sponsored by the Water Environment Research Foundation (WERF).

- c. A performance-based interim limit of 12 µg/l is included in the permit based on the following calculation:

Date	Cyanide ug/L	Ln (Cyanide) ug/L
March-97<	10.00	2.302585093
June-97<	2.00	0.693147181
September-97	4.00	1.386294361
December-97<	2.00	0.693147181
March-98	4.00	1.386294361
June-98<	2.00	0.693147181
October-98<	2.00	0.693147181
December-98	3.00	1.098612289
March-99	3.00	1.098612289
June-99	3.00	1.098612289
September-99	4.00	1.386294361
December-99	6.00	1.791759469
March-00<	3.00	1.098612289
June-00<	3.00	1.098612289
September-00<	3.00	1.098612289
December-00<	3.00	1.098612289
Average (ug/L)	3.56	1.17
Standard Deviation	2.00	0.43
Average + 3 Standard Deviation	9.56	2.46
Performance limit:		11.65139593

C. Receiving Water Limitations

1. Receiving Water Limitations C.1 and C.2 (Conditions in waters of the State):
These limits are in the existing permit and are based on water quality objectives for physical, chemical, and biological characteristics from Chapter 3 of the Basin Plan.
2. Receiving Water Limitations C.3: (Compliance with Federal and State Law):
This limit is self-explanatory.

D. Sludge Management Practices

1. Sludge Management Practices D.1 to D.7: These requirements are based on Chapter 4 of the Basin Plan, 40 CFR 257, and 40 CFR 503.

E. Provisions

1. Provision E.1 (Permit Compliance): This provision requires the Discharger to comply with the permit immediately upon adoption. It is based on 40 CFR 122.
2. Provision E.2 (Permit Rescission): Requirements prescribed by this Order supersede the requirements prescribed by Order No. 94-111. This provision rescinds the existing order. It is based on 40 CFR 122.46.
3. Provision E.3 (Self-Monitoring Program): This provision requires the Discharger to conduct effluent monitoring. The location, method, and schedule are specified in the Self-Monitoring Program. It is based on 40 CFR 122.62, 122.63, and 124.5.
4. Provision E.4 (Capacity Increase Study): If the Discharger determines that a treatment capacity increase is necessary to accommodate sewage flow increases due to growth within the Cities of Pinole and Hercules, this provision requires a study to address anti-degradation and to ensure that the treatment plant has the ability to reliably treat the projected flow increase during both dry and wet weather periods.
5. Provision E.5 (Compliance with Acute Toxicity Effluent Limitations): This provision establishes conditions by which compliance with permit limits for acute toxicity will be demonstrated. It allows the Discharger to switch from the current third edition protocol to fourth edition protocol and gives the Discharger the option to use either 96-hour continuous flow-through or static renewal bioassay with justification. It is based on the Basin Plan, Chapter 4, and BPJ.
6. Provision E.6 (Toxicity Reduction Evaluation): This provision requires the Discharger to conduct a toxicity reduction evaluation (TRE) if there is a violation of the acute toxicity limitation. It is based on the Basin Plan, Chapter 4.
7. Provision E.7 (Cyanide Data Collection Requirements): This provision requires the Discharger to participate in a discharger-funded, acceptable to the Executive Officer within specified time periods, detailing a description of the scope of a study for cyanide, along with an implementation schedule that is based on the shortest practicable time required to perform each task.
8. Provision E.8 (SSO / TMDL Participation Requirement): This provision requires the Discharger to participate in the development of a TMDL or SSO for mercury. By January 31 of each year, the Discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures and development of TMDL or SSO.
9. Provision E.9 (Optional Copper Translator Study): This provision allows the Discharger to conduct an optional copper translator study. It is based on BPJ.
10. Provision E.10 (Receiving Water Beneficial Use Study): This provision allows the Discharger to conduct a receiving water beneficial use study to assess the

appropriateness of testing for fecal coliform instead of total coliform concentrations in compliance with the Basin Plan Coliform objectives.

11. Provision E.11 (Regional Monitoring Program): This provision requires the Discharger to continue to participate in the Regional Monitoring Program. It is based on the Basin Plan.
12. Provisions E.12, E.13, and E.14 (Operations and Maintenance Manual, Contingency Plan, and Annual Status Reports): These provisions require continued implementation of programs and procedures intended to ensure optimal operation and maintenance of wastewater facilities and to reduce and control pollutants in the discharge. Provisions include submittal to the Board of progress status reports. These provisions are based on the Basin Plan, 40 CFR 122, and BPJ.
13. Provision E.15 (Standard Provisions and Reporting Requirements): This provision requires the Discharger to comply with the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*, August 1993. It is based on various state and federal regulations with specific references cited therein.
14. Provision E.16 (Optional Mass Offset): This optional provision is provided to encourage the Discharger to develop and implement means by which mass loads of mercury to San Pablo Bay could be more effectively reduced.
15. Provision E.17 (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limits as necessary in response to updated water quality objectives that may be established in the future. This provision is based on 40 CFR 123.
16. Provision E.19 (Change in Control or Ownership): This provision is self-explanatory. It is based on 40 CFR 122.61.
17. Provision E.20 (Permit Re-opener): This provision is self-explanatory. It is based on 40 CFR 122.44, 40 CFR 122.62, 40 CFR 122.63, and 40 CFR 124.5.
18. Provision E.21 (NPDES Permit): This provision is self-explanatory. It is based on 40 CFR 123.
19. Provision E.22 (Order Expiration and Reapplication): This provision specifies that this permit expires on August 1, 2006, and that the Discharger shall file a Report of Waste Discharge no later than 180 days before the expiration date. It is based on 40 CFR 122.46(a) and Title 23, California Administrative Code.

F. Self-Monitoring Program Requirements

Part A of the Self-Monitoring Program is a standard requirement in almost all NPDES permits issued by the Board. Most of the requirements are also existing requirements for the Discharger. Part A contains definitions, specifies general sampling and analytical protocols, and specifies reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water

Code, and Board policy. Part B of the Self-Monitoring Program is specific for the Discharger. It defines the stations, constituents, and frequency of monitoring, and additional reporting requirements. The constituents required to be monitored include all parameters for which permit limits are specified. This is to allow determination of compliance with each of the limited constituents in accordance with 40 CFR 122.44(i).

Pinole Effluent Limit Calculation

Constituent	Cyanide (µg/l)	4,4 DDE (µg/l)	Dieldrin (µg/l)	Copper (µg/l)	Mercury (µg/l)
Acute Aquatic Life Water Quality Objective (C)	1			3.7	2.1
Chronic Aquatic Life Water Quality Objective (C)	1			3.1	0.025
Human Health Water Quality Objective (C)	220000	0.00059	0.00014		0.051
Dilution Credit (D)	9	0	0	9	0
Ambient Background Concentration (B)	1	0.0001225	9.5925E-05	0.00012	9.6E-05
Acute Aquatic Life Effluent Concentration Allowance (ECA)	1	NA	NA	36.9989	2.1
Chronic Aquatic Life Effluent Concentration Allowance (ECA)	1	NA	NA	30.9989	0.025
Human Health Effluent Concentration Allowance (ECA)	2199991	0.00059	0.00014	NA	0.051
Coefficient of Variation (CV)		0.6	0.6	0.47098	0.76759
Standard Deviation (σ)	0	0.554513029	0.55451303	0.44759	0.68061
(σ) ₄	0	0.293560379	0.29356038	0.23232	0.37069
Z	2.326	2.326	2.326	2.326	2.326
Acute Multiplier	1	0.321083214	0.32108321	0.39026	0.25886
Chronic Multiplier	1	0.527433444	0.52743344	0.59847	0.45225
Long Term Average (Acute)	1	NA	NA	14.4393	0.5436
Long Term Average (Chronic)	1	NA	NA	18.5518	0.01131
Lowest LTAs	1	NA	NA	14.4393	0.01131
n	4	4	4	4	4
(σ) _n	0	0.293560379	0.29356038	0.23232	0.37069
Z(AMEL)	1.645	1.645	1.645	1.645	1.645
AMEL Multiplier	1	1.552424614	1.55242461	1.42643	1.71786
MDEL Multiplier	1	3.114457427	3.11445743	2.56237	3.86314
AMEL (aquatic life)	1.00	NA	NA	20.60	0.019
MDEL (aquatic life)	1.00	NA	NA	36.9989	0.044
AMEL (human health)	2199991	0.00059	0.00014	NA	0.051
MDEL/AMEL Multiplier	1	2.006189157	2.00618916	1.79635	2.24881
MDEL (human health)	2199991	0.001183652	0.00028087	NA	0.11469

Definition:

AMEL: Average Monthly Effluent Limitation

MDEL: Maximum Daily Effluent Limitation

Interim Limit Determination

If MDL or AMEL are below Performance (Ave + 3*STD)

Interim limitation is needed

Constituent		4,4 DDE (µg/l)	Dieldrin (µg/l)	Copper (µg/l)	Mercury (µg/l)
OLD LIMIT	25	NA	NA	37	0.21
MDEL	1	0.005	0.00014	37	0.044
AMEL	1	0.005	0.00014	20	0.019
Performance	12			12.1	0.087
Interim effluent?	Yes	No	No	No	Yes(1)

(1) Regional survey of secondary treatment plant performance